

CH.3.3 p.172

LINEAR INEQUALITIES IN  
TWO VARIABLES

$$AX + BY \geq C$$

$$AX + BY \leq C$$

$$3x + 7y \geq 11$$

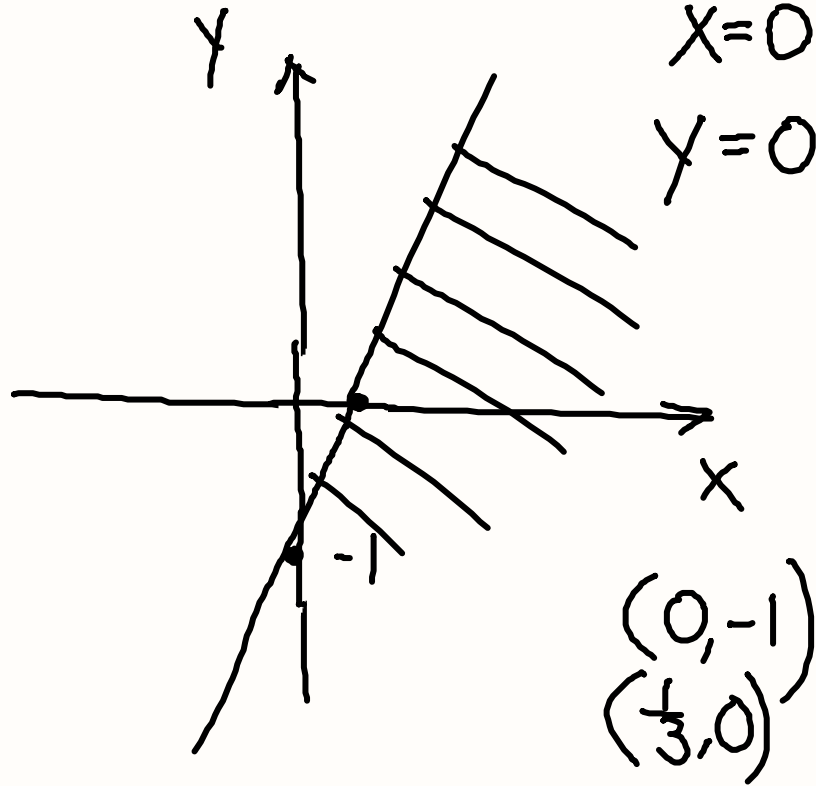
$$AX + BY > C$$

$$AX + BY < C$$

SOLUTION - REGION ON A COORDI-  
NATE PLANE XY - HALF PLANE  
DRAWING

EX.1

$$y \leq 3x - 1$$



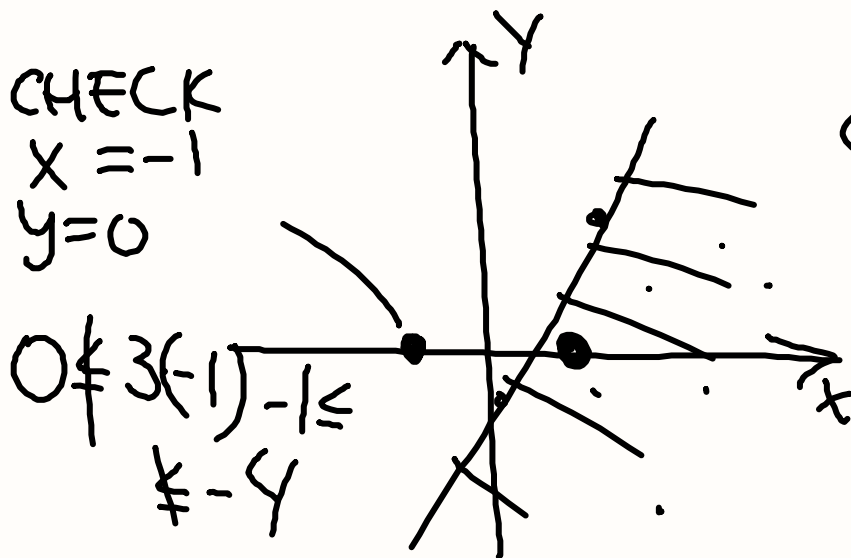
$$y = 3x - 1$$

$$\begin{array}{l} x=0 \quad y=3 \cdot 0 - 1 = -1 \\ y=0 \quad 0 = 3x - 1 \\ \quad \quad +1 \quad \quad +1 \end{array}$$

$$\frac{3x}{3} = \frac{1}{3}$$

$$x = \frac{1}{3}$$

OUR SOLUTION IS EVERY  
POINT INSIDE SHADED  
REGION INCLUDING ANY  
POINT ON A BOUNDARY LINE



CHECK  $x = 1$   
 $y = 0$

$y \leq 3x - 1$

$0 \leq 3(1) - 1 \leq 2$

$\geq \leq$  BOUNDARY LINE IS SOLID

$> <$  BOUNDARY LINE IS DOTTED

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$$x + 3y < 1$$

$$-x$$

$$-x$$

$$3y < (1-x)$$

$$\frac{3y}{3} < \frac{(1-x)}{3}$$

$$y < \frac{(1-x)}{3}$$

$$\textcircled{\#25} \quad 6x - 4y > -2$$

$$-6x$$

$$-6x$$

$$-4y > -2 - 6x$$

$$\div -4$$

$$\div -4$$

$$\div -4$$

$$y > \frac{2}{4} + \left(\frac{6}{4}\right)x$$

PRACTICE p.176 #11,13,21,25

HOME p.176 #22-30 even.